

Project Expenditures: Project Priority List Details

Line	Project Category	Project Name	2020 Budget Range	2021 Budget Range
44	Technical Foundation - Hardware Refreshes	Common Infrastructure	\$1M-\$3M	\$1M-\$3M
45	Technical Foundation - Hardware Refreshes	Tech Foundation - Hardware Projects Funding - 2020/2021	\$250k-\$500k	\$250k-\$500k

Line	Project Category	Project Name	2020 Budget Range	2021 Budget Range
46	Technical Foundation - Software	Privileged Account Management (PAM) Phase 2	\$500k-\$1M	-
47	Technical Foundation - Software	Enterprise Database Upgrade	<\$50k	-
48	Technical Foundation - Software	Retail System Replacement - EDI (Electronic Data Interchange) Map and Translator	\$1M-\$2M	<\$50k
49	Technical Foundation - Software	Tech Refresh - MMS/OS (Market Management System/Outage Scheduler)	\$1M-\$2M	\$50k-\$100k
50	Technical Foundation - Software	Tech Refresh - REC (Renewable Energy Credit) Rewrite	\$250k-\$500k	-
51	Technical Foundation - Software	Tech Refresh - Business Intelligence	\$100k-\$250k	-
52	Technical Foundation - Software	Middleware Job Scheduling Software Replacement	\$100k-\$250k	-
53	Technical Foundation - Software	Tech Refresh - NAESB (North American Energy Standards Board) Application	<\$50k	-
54	Technical Foundation - Software	Wide Area Network (WAN) Refresh	\$100k-\$250k	-
55	Technical Foundation - Software	MPIM (Market Participant Identity Management) Replacement	\$500k-\$1M	-
56	Technical Foundation - Software	Tech Refresh - Desktop Productivity Software Upgrade	\$500k-\$1M	-
57	Technical Foundation - Software	Tech Refresh - Work Management System Upgrade or Replacement	\$50k-\$100k	-
58	Technical Foundation - Software	Internet Protocol Address Management (iPAM)	\$100k-\$250k	-
59	Technical Foundation - Software	Cyber Security Project #25	\$50k-\$100k	-
60	Technical Foundation - Software	Tech Refresh - MV90 Software & Database upgrade	\$250k-\$500k	-



Project Expenditures: Project Priority List Details

101

Line	Project Category	Project Name	2020 Budget Range	2021 Budget Range
61	Technical Foundation - Software	Tech Refresh - Registration System Upgrade	\$500k-\$1M	\$100k-\$250k
62	Technical Foundation - Software	Settlements Code Enhancement: Invoices & Statements, Bill Calculations	\$100k-\$250k	-
63	Technical Foundation - Software	Cyber Security Project #26	\$100k-\$250k	\$100k-\$250k
64	Technical Foundation - Software	Tech Refresh - Control Room	-	\$500k-\$1M
65	Technical Foundation - Software	Tech Refresh - EMS (Energy Management System) Upgrade	\$500k-\$1M	\$1M-\$3M
66	Technical Foundation - Software	Tech Refresh - MarkeTrak Upgrade	-	<\$50k
67	Technical Foundation - Software	Tech Refresh - CRR (Congestion Revenue Rights)	-	\$500k-\$1M
68	Technical Foundation - Software	Tech Refresh - NMMS (Network Model Management System)	-	\$500k-\$1M
69	Technical Foundation - Software	Tech Refresh - Enterprise Database Software	\$500k-\$1M	-
70	Technical Foundation - Software	Tech Foundation - Software Projects Funding - 2020/2021	\$1M-\$2M	\$4M-\$6M

62





Date: June 4, 2019
To: Board of Directors
From: Terry Bulger, Finance and Audit (F&A) Committee Chair
Subject: 2020-2021 Budget and Fee

Issue for the ERCOT Board of Directors

ERCOT Board of Directors Meeting Date: June 11, 2019

Item No.: 8.1

Issue:

Approval by the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) of the ERCOT 2020-2021 Biennial Budget.

Background/History:

Public Utility Commission of Texas (PUC) Substantive Rule 25.363, ERCOT Budget and Fee

P.U.C. SUBST. R. 25.363(e) provides that the ERCOT budget (Budget) and any change in the system administration fee are subject to review and approval by the PUC. P.U.C. SUBST. R. 25.363(d) further specifies that the review and approval of a proposed Budget, or a proceeding to authorize and set the range for the amount of the fee is not a contested case.

P.U.C. SUBST. R. 25.363(e) provides that, prior to submission of the Budget for Board approval, ERCOT shall consult with PUC staff in connection with the development of the Budget and provide PUC staff with information concerning budget strategies, staffing requirements, categories of expenses, capital outlays, exceptional expenses and capital items, and proposals to incur additional debt.

ERCOT Bylaws

Sections 4.10 (*Duties*) and 10.3 (*Budget*) of the ERCOT Bylaws require that the Board approve the Budget.

ERCOT Board Policies and Procedures

Section 3.3 of the Board Policies and Procedures provides as follows:

The CEO will present to the Board by October of each year when the Budget is to be approved, or at such other time as directed by the Board, a Budget to carry out the Board's directives for the following year or longer as directed by the Board. The Budget will include projections of ERCOT's overall financial performance and financing plans, and describe the services, projects, programs, and the associated revenues and expenditures for the next fiscal year. Adoption of the Budget by the Board and as approved by the PUC authorizes the CEO to complete work

plans and make associated expenditures as provided for in accordance with the Budget.

F&A Committee Charter

The Duties and Responsibilities section of the Finance & Audit Committee Charter states in pertinent part:

With respect to budget oversight...

1. Annually or biennially, the Committee shall review staff's proposed budget for the following year(s).
2. The Committee shall review the staff's recommendation of the amount and type of financing needed, both revenue and debt financing, to support the proposed budget and meet the Company's liquidity needs.
3. Following the Committee's review of the above items, the Committee shall recommend to the Board, a proposed budget and associated financing plan for the following year(s).

The F&A Committee is expected to recommend to the Board whether it should approve, reject or amend the 2020-2021 Biennial Budget at its June 11, 2019 meeting.

Key Factors Influencing Issue:

- ERCOT requires approval of the Budget by the Board and the PUCT for funding to enable ERCOT to fulfill its statutory functions as an independent organization as required by Section 39.151(a) of the Public Utility Regulatory Act (PURA). For instance, ERCOT must have adequate funds in 2020 and 2021 to:
 - Maintain compliance with the Financial Corporate Standard and associated financial performance measures as approved by the Board;
 - Fund independent market monitoring, PURA, and North American Electric Reliability Corporation (NERC) compliance functions;
 - Staff appropriately to participate in and support full market operations;
 - Implement system improvements and required functionality to support the market;
 - Enhance and maintain the computer systems and associated services contracted for with vendors; and
 - Maintain necessary facilities to provide secure operations and house staff.
- In the fourth quarter of 2018 and the first and second quarters of 2019, ERCOT staff discussed financial assumptions, methodologies, schedules and a system administration fee relating to the 2020-2021 Biennial Budget with PUCT staff designated by the PUCT Executive Director.
- ERCOT staff will present its recommended 2020-2021 Biennial Budget to the F&A Committee on June 10, 2019.
- The Budget recommended by ERCOT staff will keep the ERCOT system administration fee flat at \$0.5550 for 2020 and 2021.

Conclusion/Recommendation:

ERCOT staff recommends, and the F&A Committee is expected to recommend, that the Board:

- Approve the recommended 2020-2021 Biennial Budget as set forth in Attachment A, which includes \$268,310,985 and \$275,156,917 total spending authorization for operating expenses, project spending, and debt service obligations for 2020 and 2021, respectively;
- Approve the recommended ERCOT system administration fee of \$0.5550 per megawatt-hour rate for 2020-2021, which represents no increase from the current ERCOT system administration fee, as set forth in Attachment B; and
- Authorize ERCOT Legal to file the Board-approved 2020-2021 Biennial Budget for approval by the PUCT, pursuant to P.U.C. SUBST. R. 25.363(d).



ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.
BOARD OF DIRECTORS RESOLUTION

WHEREAS, after due consideration of the alternatives, the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) deems it desirable and in the best interest of ERCOT to accept the recommendations of ERCOT staff and the Finance and Audit (F&A) Committee that the Board approve the ERCOT recommended 2020-2021 Biennial Budget (Budget), which includes operating expenses, project spending, and debt service obligations; and

WHEREAS, Sections 4.10 (*Duties*) and 10.3 (*Budget*) of the Amended and Restated Bylaws of Electric Reliability Council of Texas, Inc., approved on January 17, 2019 (Bylaws), requires that the Board approve the Budget; and

WHEREAS, ERCOT staff discussed financial assumptions, methodologies and schedules relating to the Budget in a public meeting with the F&A Committee, and consulted with the staff of the Public Utility Commission of Texas (PUCT) regarding development of the Budget; and

WHEREAS, ERCOT staff presented its recommended 2020-2021 Biennial Budget, which includes a total spending authorization of \$268,310,985 and \$275,156,917 respectively; and

WHEREAS, the Budget recommended by ERCOT staff will keep the ERCOT system administration fee flat at \$0.5550 for 2020 and 2021;

THEREFORE, BE IT RESOLVED, that the Board hereby:

- Approves the recommended 2020-2021 Biennial Budget as set forth in Attachment A, which includes \$268,310,985 and \$275,156,917 total spending authorization for operating expenses, project spending, and debt service obligations for 2020 and 2021, respectively; and
- Approves the request for the ERCOT system administration fee of \$0.5550 per megawatt-hour for 2020 and 2021 as set forth in Attachment B; and
- Authorizes ERCOT Legal to file the Board-approved 2020-2021 Biennial Budget for approval by the PUCT, pursuant to P.U.C. SUBST. R. 25.363(d).



CORPORATE SECRETARY'S CERTIFICATE

I, Vickie G. Leady, Assistant Corporate Secretary of ERCOT, do hereby certify that, at its June 11, 2019 meeting, the ERCOT Board passed a motion approving the above Resolution by _____.

IN WITNESS WHEREOF, I have hereunto set my hand this ____ day of June, 2019.

Vickie G. Leady
Assistant Corporate Secretary

Attachment A
Fiscal Years 2020-2021 Management Recommended Budget
(\$ in Thousands)

Sources and Uses		2018 Actual	2019 Budget	2019 Forecast	2020 Request	2021 Request	2022 Projection	2023 Projection	2024 Projection	2025 Projection
1	System Administration Fee Revenues	\$ 209,881	\$ 207,425	\$ 211,663	\$ 222,640	\$ 229,274	\$ 236,244	\$ 242,865	\$ 249,986	\$ 255,869
2	Reliability Organization Assessment *	16,328	15,000	15,789	19,800	19,800	19,800	19,800	19,800	19,800
3	Interest Income	13,091	1,300	20,000	20,000	20,000	20,000	20,000	20,000	20,000
4	Other Revenues	5,630	4,287	6,533	5,871	6,083	6,235	6,391	6,544	6,695
5	Total Sources	\$ 244,929	\$ 228,012	\$ 253,985	\$ 268,311	\$ 275,157	\$ 282,279	\$ 289,056	\$ 296,330	\$ 302,363
6	Department Expenditures	\$ 162,252	\$ 172,936	\$ 173,148	\$ 181,086	\$ 187,168	\$ 193,496	\$ 200,779	\$ 207,567	\$ 215,258
7	Project Expenditures	40,324	28,500	20,400	32,000	34,000	39,250	52,650	48,850	31,250
8	Reliability Organization Assessment *	16,328	15,000	15,789	19,800	19,800	19,800	19,800	19,800	19,800
9	Debt Service	5,438	5,997	5,821	5,683	5,531	5,340	5,007	5,010	5,170
10	Repayment of CRR Borrowings	20,587	5,580	12,639	-	-	-	-	-	-
11	Increase in Cash Balance	-	-	26,188	29,741	28,657	24,392	10,820	15,104	30,885
12	Total Uses	\$ 244,929	\$ 228,012	\$ 253,985	\$ 268,311	\$ 275,157	\$ 282,279	\$ 289,056	\$ 296,330	\$ 302,363
* Reliability Organization Assessment is a pass-through collected on behalf of the Texas Regional Entity; it is not set by ERCOT										

Schedule may not foot due to rounding

Attachment B
Fiscal Years 2020-2021 Management Recommended Budget
(\$ in Thousands)

Budget Summary

Line		2018 Actual	2019 Budget	2019 Forecast	2020 Request	2021 Request	2022 Projection	2023 Projection	2024 Projection	2025 Projection
1	System Administration Fee Rate	\$ 0.5550	\$ 0.5550	\$ 0.5550	\$ 0.5550	\$ 0.5550	\$ 0.5550	\$ 0.5550	\$ 0.5550	\$ 0.5550
2	Energy Consumption (GWH)	378,163	373,739	381,374	401,153	413,107	425,665	437,595	450,426	461,025
3	System Administration Fee Revenues	\$ 209,881	\$ 207,425	\$ 211,663	\$ 222,640	\$ 229,274	\$ 236,244	\$ 242,865	\$ 249,986	\$ 255,869
4	Department Net Expenditures	\$ 156,623	\$ 168,649	\$ 166,616	\$ 175,215	\$ 181,085	\$ 187,262	\$ 194,388	\$ 201,023	\$ 208,564
5	Project Expenditures	40,324	28,500	20,400	29,000	29,000	27,250	42,650	38,850	31,250
6	Real Time Co-optimization Project	-	-	-	3,000	5,000	12,000	10,000	10,000	-
7	Total Net Expenditures	\$ 196,947	\$ 197,149	\$ 187,016	\$ 207,215	\$ 215,085	\$ 226,512	\$ 247,038	\$ 249,873	\$ 239,814
8	Net Available Before Non-Operating Sources & Uses	\$ 12,934	\$ 10,277	\$ 24,647	\$ 15,425	\$ 14,189	\$ 9,733	\$ (4,173)	\$ 114	\$ 16,055
9	Debt Service	\$ (5,438)	\$ (5,997)	\$ (5,821)	\$ (5,683)	\$ (5,531)	\$ (5,340)	\$ (5,007)	\$ (5,010)	\$ (5,170)
10	Interest Income	13,091	1,300	20,000	20,000	20,000	20,000	20,000	20,000	20,000
11	Non-Operating Sources & Uses	\$ 7,653	\$ (4,697)	\$ 14,179	\$ 14,317	\$ 14,469	\$ 14,660	\$ 14,993	\$ 14,990	\$ 14,830
12	Net Available	\$ 20,587	\$ 5,580	\$ 38,826	\$ 29,741	\$ 28,657	\$ 24,392	\$ 10,820	\$ 15,104	\$ 30,885
Year-End Balances: Notes Payable, CRR Borrowings, Cash, and Real Time Co-optimization Project Funding										
		2018 Actual	2019 Budget	2019 Forecast	2020 Request	2021 Request	2022 Projection	2023 Projection	2024 Projection	2025 Projection
13	Notes Payable Balance	\$ 55,000	\$ 51,000	\$ 51,000	\$ 47,000	\$ 43,000	\$ 39,000	\$ 35,000	\$ 31,000	\$ 27,000
14	CRR Borrowings Balance	\$ 12,639	\$ 7,059	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
15	Cash Balance	\$ -	\$ -	\$ 26,188	\$ 55,929	\$ 84,586	\$ 108,978	\$ 119,798	\$ 134,902	\$ 165,786
16	Real Time Co-optimization Project Funding Balance	\$ 17,089	\$ -	\$ 50,335	\$ 47,335	\$ 42,335	\$ 30,335	\$ 20,335	\$ 10,335	\$ 10,335

Schedule may not foot due to rounding

Attachment C

Statement of ERCOT Chief Executive Officer Summarizing ERCOT's 2020/2021 Biennial Budget and System Administration Fee

PUC REVIEW OF ERCOT BUDGET § PUBLIC UTILITY COMMISSION

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OF TEXAS

71

1. Access to the transmission and distribution systems for all buyers and sellers of electricity on nondiscriminatory terms;
2. The reliability and adequacy of the regional electrical network;
3. That information relating to a customer's choice of retail electric provider is conveyed in a timely manner to the persons who need that information; and
4. That electricity production and delivery are accurately accounted for among the generators and wholesale buyers and sellers in the region.¹

ERCOT's actions in furtherance of its statutory mission are subject to the oversight and review of the Commission. In addition, ERCOT is responsible for ensuring compliance with federal electric reliability standards, pursuant to the Federal Power Act. For federal reliability standards, ERCOT is accountable to the Texas Reliability Entity (TRE), the North American Electric Reliability Corporation (NERC), and the Federal Energy Regulatory Commission (FERC).

ERCOT is governed by a board of directors, the composition of which is mandated by statute,² as is the Commission's oversight role.³ The members of the ERCOT Board and the dates of their terms are identified in the schedules as Work Paper 1 in Attachment D, ERCOT 2020/2021 Biennial Budget Schedules and Work Papers. The identification of ERCOT's Board members is as of the date of this filing. However, the annual election of directors representing market segments, and the expiration of terms and seating of unaffiliated directors, will result in some new ERCOT Board members serving in 2020 and 2021.

¹ PURA § 39.151(a)(1)-(4).

² See PURA § 39.151(g).

³ See PURA § 39.151(c)-(f). The Commission's oversight of ERCOT is further detailed in Chapter 25, Subchapter O, Division 2 (Independent Organizations) of the 16 Tex. Admin. Code (TAC), and in 16 TAC § 22.251 – 22.252 of the P.U.C. Procedural Rules.

High-Level Overview: ERCOT's Proposed 2020/2021 Biennial Budget

Spending Authorization

ERCOT's proposed 2020/2021 biennial budget authorizes total spending for operating expenses, project spending, and debt service in the amounts of \$268.3 million for 2020, and \$275.2 million for 2021.

As documented in the materials filed with this application, ERCOT management and staff are dedicated to running efficient operations. As part of its overarching operations strategy, ERCOT proactively optimizes the use of ERCOT's resources to continuously provide high-value services.

ERCOT is also responsible for budgeting to fund the operations of the NERC Electric Reliability Organization (ERO). Funding for NERC/ERO operations is a pass-through fee that is not used to fund ERCOT operations. A total of \$39.6 million of ERCOT's proposed 2020/2021 biennial budget will be used to fund the NERC/ERO for 2020 and 2021.

Revenue Sources

ERCOT's proposed 2020/2021 biennial budget includes system administration fee requirements of \$222.6 million in 2020, and \$229.3 million in 2021. The proposed biennial budget allows ERCOT to continue to maintain the system administration fee at \$0.555 MWh in fiscal years 2020 and 2021. The Board and ERCOT management are acutely aware that the consumers of Texas fund ERCOT, and that ERCOT must remain focused on running a lean but effective organization that not only meets, but exceeds the performance expectations of those ERCOT serves.

The Commission's rules⁴ permit the Board to approve user fees for specific services provided by ERCOT to Market Participants and the public. These user fees are included in the ERCOT Fee Schedule that is maintained along with the ERCOT Protocols. While user fees do not recover a large portion of ERCOT's revenue requirement (user fees are expected to generate \$5.9 million in 2020 and \$6.1 million in 2021), ERCOT regularly reviews user fees to ensure the recovery of appropriate costs. ERCOT may recommend other user fee changes to the Board while the 2020/2021 ERCOT biennial budget is in effect, but management is not aware of specific new fees or their revenues at this time.

ERCOT's proposed 2020/2021 biennial budget includes interest income of \$20.0 million in both 2020 and 2021.

⁴ See 16 TAC § 25.363(f).

<u>Sources and Uses Summary Table</u>		
	2020 Board Approved Amount <u>(\$ in millions)</u>	2021 Board Approved Amount <u>(\$ in millions)</u>
<u>Sources</u>		
System Administration Fee Revenues	\$222.6	\$229.3
Reliability Organization Assessment	19.8	19.8
Interest Income	20.0	20.0
Other Revenues	<u>5.9</u>	<u>6.1</u>
Total Sources	\$268.3	\$275.2
<u>Uses</u>		
Department Expenditures	\$181.1	\$187.2
Project Expenditures	32.0	34.0
Reliability Organization Assessment	19.8	19.8
Debt Service	5.7	5.5
Increase in Cash Balance	<u>29.7</u>	<u>28.7</u>
Total Uses	\$268.3	\$275.2

Mission and Driving Forces

ERCOT's mission and driving forces are detailed in its 2019 - 2023 Strategic Plan, which is included in ERCOT's 2020/2021 Biennial Budget and System Administration Fee Submission as Attachment E, ERCOT 2019 – 2023 Strategic Plan.

Budget Drivers for 2020/2021

In its presentations to the ERCOT Board, and in its consultation meetings with Commission staff, ERCOT has identified three budget request drivers for 2020/2021 as follows:

1. Maintain a flat system administration fee at \$0.555 per MWh, which is consistent relative to the approved 2018/2019 biennial budget;
2. Incorporate key initiatives and new demands; and
3. Comply with the ERCOT Board's debt strategy guidance.

Maintenance of a Flat System Administration Fee Consistent Relative to Approved 2018/2019 Biennial Budget

ERCOT has prioritized maintaining consistency relative to the approved 2018/2019 biennial budget as one of its three budget drivers. To maintain this consistency relative to the approved 2018/2019 biennial budget, ERCOT will maintain the current system administration fee of \$0.555 per MWh through the 2021 budget year. In addition, relative to the approved 2018/2019 biennial budget, ERCOT will continue to maintain department net expenditures consistent with prior projections, add a Real-Time Co-optimization (RTC) Project, maintain project expenditures with a consistent multi-year approach of approximately \$200 million across six years (including

major refreshes), expect a material increase in system administration fee revenues due to higher load growth, and expect a significant increase in interest income due to more Congestion Revenue Rights (CRR) auction receipts and higher interest rates.

At the January 17, 2019 Commission Open Meeting, the Commission discussed RTC and gave direction on three matters. First, ERCOT should begin the process to implement RTC in the ERCOT market. Second, ERCOT shall report back to the Commission with “a high level implementation plan and timeline.”⁵ And lastly, ERCOT shall set aside “any favorable variance in revenues” for fiscal years 2018 and 2019. With respect to the favorable financial variance, ERCOT forecasts a total favorable financial variance of approximately \$50.3 million for fiscal years 2018 and 2019. The final favorable financial variance for 2018, based on the audited financial statements and presented to the Board on April 2019, is approximately \$17.1 million; and the favorable financial variance for 2019 is forecast to be approximately \$33.2 million. The final favorable financial variance for 2019 is expected to be presented to the Board in April 2020 based on the audited financial statements for 2019. ERCOT has discussed this plan for the RTC Project with both the Commission and the ERCOT Board.⁶

Incorporation of Key Initiatives and New Demands

For another budget driver, ERCOT has incorporated key initiatives and new demands, but expects to recognize efficiency savings to help offset costs of these new demands. ERCOT will incorporate its strategic plan objectives by enhancing operating capabilities to maintain reliability of an increasingly complex system, improving information exchange to facilitate collaborative interaction, advancing competitive solutions for a changing industry, and optimizing use of ERCOT’s resources to provide high-value services continuously. New demands placed upon ERCOT include regulatory requirements, protocol and planning revisions, and system improvements to manage ERCOT business and an increasingly complex grid better. With regard to the regulatory requirements, ERCOT anticipates information technology change management and configuration management improvements for Critical Infrastructure Protection (CIP) compliance as well as increasing amounts of stability analyses using new types of data and new techniques. In addition, ERCOT expects protocol and planning revisions, including stability assessments for interconnecting generation, voltage set point communications, and interconnection study increases. As to the system improvements, ERCOT expects to develop and/or refine grid operations capabilities by implementing Security Constrained Unit Commitment (SCUC) and Reactive Power Coordination (RPC). In addition, Senate Bill 936 requires the Commission and ERCOT to contract with an entity to serve as the Commission cybersecurity monitor. According to the legislation, ERCOT shall provide support, access and information to

⁵ *Review of Real-Time Co-Optimization in the ERCOT Market*, Project No. 48540, Chairman DeAnn T. Walker’s Memorandum to Commissioners Arthur C. D’Andrea and Shelly Botkin (Jan. 16, 2019).

⁶ *Review of Real-Time Co-Optimization in the ERCOT Market*, Project No. 48540, Letter from ERCOT Vice President and General Counsel Chad V. Seely to Chairman DeAnn T. Walker, Commissioner Arthur C. D’Andrea and Commissioner Shelly Botkin (Jan. 31, 2019); *Discussion of 2020-2021 Biennial Budget Assumptions*, presented by ERCOT Controller Sean Taylor for Agenda Item 4 of the Apr. 8, 2019 ERCOT F&A Committee Meeting; and *2020-2021 Budget and Fee*, presented by ERCOT Unaffiliated Director and F&A Committee Chairman Terry Bulger for Agenda Item 8.1 of the Jun. 11, 2019 ERCOT Board Meeting.

the cybersecurity monitor necessary for the monitor to operate and will use funds from the system administration fee to pay for the monitor's operations.

Compliance with the ERCOT Board's Debt Strategy Guidance

The final budget driver is ERCOT's need to comply with the Board's debt strategy guidance. In order to maintain compliance with this strategy, ERCOT will maintain or improve ERCOT's long-term financial integrity by continuing to decrease outstanding debt and increase liquidity. ERCOT will maintain stable, fair and predictable fees by using debt matching appropriately. In addition, ERCOT will provide lowest cost to system administration fee-payers by using the lowest cost debt that is available and appropriate.

As an ongoing effort to maintain the current system administration fee level, ERCOT management continues to seek areas of opportunity to improve operational efficiency. ERCOT management has improved operational efficiency through a variety of efficiency initiatives. Examples of efficiency savings ERCOT has implemented to help offset costs of new demands include: (1) the Congestion Revenue Rights (CRR) Framework Upgrade created efficiencies, helping offset the increased workload resulting from the introduction of the 3-year CRR auctions; (2) the Statistical Analysis System (SAS) Technical Architecture Redesign reduced hardware and maintenance costs, helping offset increased system support labor; and (3) the increase to the Regional Planning Group's (RPG) review threshold reduced workload, helping offset increased workload from Sub-Synchronous Resonance studies. ERCOT continues to streamline its processes for low-risk, low-cost projects, thereby reducing complexity and staff time and delivering to the market and other users faster. ERCOT management will actively continue to seek these types of opportunities for improved operational efficiency throughout the 2020-2021 budget years.

Conclusion

ERCOT will provide additional information, as requested, to facilitate the Commission's review of ERCOT's 2020/2021 Biennial Budget and System Administration Fee Submission. ERCOT respectfully requests that the review process conclude by year-end 2019 to allow ERCOT to implement the proposed 2020/2021 biennial budget and system administration fee beginning January 1, 2020.

Bill Magness
ERCOT President & Chief Executive Officer

Attachment D

ERCOT 2020/2021 Biennial Budget Schedules and Work Papers

Electric Reliability Council of Texas, Inc. (ERCOT)
Fiscal Year 2020-2021 Budget Request
Schedule 1: Method of Finance (\$ in Thousands)

Line	Method of Finance	2018 Actual		2019 Budget		2020 Request		2021 Request		2022 Projection		2023 Projection		2024 Projection		2025 Projection	
		\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%
1	System Administration Fee Revenues	\$ 209,881	86%	\$ 207,425	91%	\$ 222,640	83%	\$ 229,274	83%	\$ 236,244	84%	\$ 242,865	84%	\$ 249,986	84%	\$ 255,869	85%
2	Reliability Organization Assessment Fee	16,328	7%	15,000	7%	19,800	7%	19,800	7%	19,800	7%	19,800	7%	19,800	7%	19,800	7%
3	Interest Income	13,091	5%	1,300	1%	20,000	7%	20,000	7%	20,000	7%	20,000	7%	20,000	7%	20,000	7%
4	Other Revenues																
5	Private Wide-Area Network Fee	2,912	1%	2,959	1%	3,187	1%	3,399	1%	3,484	1%	3,571	1%	3,656	1%	3,740	1%
6	Generation Interconnection Study Fee	1,804	1%	495	0%	1,700	1%	1,700	1%	1,743	1%	1,786	1%	1,829	1%	1,871	1%
7	Operations Training Seminar	306	0%	290	0%	291	0%	291	0%	298	0%	305	0%	313	0%	320	0%
8	Membership Dues	284	0%	268	0%	268	0%	268	0%	275	0%	282	0%	289	0%	296	0%
9	Blackstart Training	136	0%	235	0%	363	0%	363	0%	372	0%	381	0%	390	0%	399	0%
10	Special Project Billing	127	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%
11	Market Participant Registration Fees	61	0%	40	0%	63	0%	63	0%	64	0%	66	0%	67	0%	69	0%
12	Sub-Total Other Revenues	5,630	2%	4,287	2%	5,871	2%	6,083	2%	6,235	2%	6,391	2%	6,544	2%	6,695	2%
13																	
14	Total - ERCOT	\$ 244,929	100%	\$ 228,012	100%	\$ 268,311	100%	\$ 275,157	100%	\$ 282,279	100%	\$ 289,056	100%	\$ 296,330	100%	\$ 302,363	100%

Schedule may not foot due to rounding

Note: Certain prior year amounts have been reclassified for consistency with the current presentation. These reclassifications had no effect on the reported results of operations.

Electric Reliability Council of Texas, Inc. (ERCOT)
Fiscal Year 2020-2021 Budget Request
Schedule 2: Summary by Object of Expense (\$ in Thousands)

Line	Object of Expense	2018 Actual	2019 Budget	2020 Request	2021 Request	2022 Projection	2023 Projection	2024 Projection	2025 Projection
1	Salaries & Wages	\$ 80,243	\$ 83,546	\$ 87,018	\$ 90,950	\$ 94,459	\$ 98,653	\$ 102,496	\$ 107,039
2	Other Personnel Costs	25,623	28,436	28,536	30,268	31,433	32,826	34,102	35,611
3	Professional Fees & Services	14,323	13,896	18,725	18,209	18,664	19,130	19,590	20,040
4	Fuels & Lubricants	32	40	40	40	41	42	43	44
5	Consumable Supplies	176	232	194	207	212	218	223	228
6	Utilities	5,201	5,939	6,065	6,326	6,484	6,646	6,805	6,962
7	Travel	1,090	1,807	1,589	1,607	1,647	1,688	1,729	1,769
8	Rent - Building	775	954	912	1,186	1,216	1,246	1,276	1,305
9	Rent - Machine & Other	104	144	122	124	127	131	134	137
10	Debt Service	5,070	5,577	5,203	5,051	4,860	4,527	4,530	4,690
11	Other Operating Expenses	8,981	12,350	11,358	11,471	11,751	12,038	12,322	12,601
12	HW/SW Maintenance & Licenses	22,230	23,607	24,653	24,836	25,456	26,093	26,719	27,334
13	Reliability Organization Assessment	16,328	15,000	19,800	19,800	19,800	19,800	19,800	19,800
14	Capital Expenditures	44,168	30,905	34,356	36,425	41,736	55,198	51,459	33,919
15	Sub-Total Objects of Expense	\$ 224,342	\$ 222,433	\$ 238,570	\$ 246,500	\$ 257,887	\$ 278,236	\$ 281,227	\$ 271,478
16									
17	Repayment of CRR Borrowings	20,587	5,580	-	-	-	-	-	-
18	Increase in Cash Balance	-	-	29,741	28,657	24,392	10,820	15,104	30,885
19									
20	Total - ERCOT	\$ 244,929	\$ 228,012	\$ 268,311	\$ 275,157	\$ 282,279	\$ 289,056	\$ 296,330	\$ 302,363

Schedule may not foot due to rounding

Note Certain prior year amounts have been reclassified for consistency with the current presentation. These reclassifications had no effect on the reported results of operations.

Electric Reliability Council of Texas, Inc. (ERCOT)

Fiscal Year 2020-2021 Budget Request

Schedule 3: Summary by Object of Expense-Exceptional Requests (\$ in Thousands)

Line	Object of Expense	2018		2019		2020		Exceptional Request #1		Exceptional Request #2		Exceptional Request #3		Exceptional Request #4	
		Actual	Budget	Budget	Dollars	Fee Impact	Dollars	Fee Impact	Dollars	Fee Impact	Dollars	Fee Impact			
1	Salaries & Wages	\$ 80,243	\$ 83,546	\$ 83,546	\$ -	\$ -	\$ 359	\$ 0 0009	\$ -	\$ -	\$ 3,113	\$ 0 0078			
2	Other Personnel Costs	25,623	28,436	28,436	-	-	35	0 0001	-	-	65	0 0002			
3	Professional Fees & Services	14,323	13,896	13,896	-	-	3,844	0 0096	-	-	986	0 0025			
4	Fuels & Lubricants	32	40	40	-	-	-	-	-	-	(0)	-			
5	Consumable Supplies	176	232	232	-	-	-	-	-	-	(39)	(0 0001)			
6	Utilities	5,201	5,939	5,939	-	-	-	-	-	-	127	0 0003			
7	Travel	1,090	1,807	1,807	-	-	-	-	-	-	(218)	(0 0005)			
8	Rent - Building	775	954	954	-	-	-	-	-	-	(42)	(0 0001)			
9	Rent - Machine & Other	104	144	144	-	-	-	-	-	-	(22)	(0 0001)			
10	Debt Service	5,070	5,577	5,577	-	-	-	-	-	-	(374)	(0 0009)			
11	Other Operating Expenses	8,981	12,350	12,350	-	-	-	-	-	-	(992)	(0 0025)			
12	HW/SW Maintenance & Licenses	22,230	23,607	23,607	-	-	429	0 0011	-	-	616	0 0015			
13	Reliability Organization Assessment	16,328	15,000	15,000	4,800	0 0120	-	-	-	-	-	-			
14	Capital Expenditures	44,168	30,905	30,905	-	-	-	-	3,451	0 0086	-	-			
15	Total - ERCOT	\$ 224,342	\$ 222,433	\$ 222,433	\$ 4,800	\$ 0 0120	\$ 4,668	\$ 0 0116	\$ 3,451	\$ 0 0086	\$ 3,219	\$ 0 0080			
											Schedule may not foot due to rounding				

- 2020 Exceptional Request #1

This \$4,800K is an increase imposed for the Reliability Organization Assessment which is a pass-through collected on behalf of the Texas Regional Entity. It is not set by ERCOT

- 2020 Exceptional Request #2

This \$4,668K is required for new demands, such as regulatory requirements, protocol and planning revisions, and system improvements to better manage ERCOT business and an increasingly complex grid

- 2020 Exceptional Request #3

This \$3,451K is for capital expenditures. The increase is driven by \$3,000K of budgeted spend in 2020 for the Real Time Co-optimization (RTC) project, which had no budgeted spend in 2019. The RTC project will be funded by ERCOT's 2018 and 2019 favorable financial variances, therefore this is an increase to ERCOT's total spend request but not the 2020 system administration fee requirement.

- 2020 Exceptional Request #4

This \$3,219K is needed for normal labor growth and inflationary increases. These increases are offset by reductions, where efficiencies and cost savings have been achieved.

2019 Budgeted System Administration Fee Rate	\$ 0.5550
Exceptional Requests (Included Above)	0 0402
Higher Energy Consumption (27,413 GWhs)	(0 0379)
Increase of Other Revenues (\$25,084K)	(0 0625)
Change in Net Available (\$24,161K)	0 0602
2020 Requested System Administration Fee Rate	\$ 0.5550

Electric Reliability Council of Texas, Inc. (ERCOT)

Fiscal Year 2020-2021 Budget Request

Workpaper 1: 2019 Board Of Directors

Line	Role	Board Member	Board Member Type	Term
1	Director, Board Chair	Craven Crowell	Unaffiliated (Independent) Director	Term 1 01/01/2012-12/31/2014 Term 2 01/01/2015 - 12/31/2017 Term 3 (final) 01/01/2018-12/31/2020
2	Director, Vice Chair	Judy Walsh	Unaffiliated (Independent) Director	Term 1 01/01/2012-12/31/2014 Term 2 01/01/2015 - 12/31/2017 Term 3 (final) 01/01/2018-12/31/2020
3	Director	Peter Cramton	Unaffiliated (Independent) Director	Term 1 08/17/2015 - 08/16/2018 Term 2 08/17/2018-08/16/2021
4	Director	Karl Pfaffmann	Unaffiliated (Independent) Director	Term 1 01/01/2012-12/31/2014 Term 2 01/01/2015 - 12/31/2017 Term 3 (final) 01/01/2018-12/31/2020
5	Director	Terry Bulger	Unaffiliated (Independent) Director	Term 1 03/29/2018-03/28/2021
6	Director	DeAnn T. Walker	Public Utility Commission of Texas Chair (<i>Ex Officio</i> , Non-Voting Director)	
7	Director	Bill Magness	ERCOT Chief Executive Officer (<i>Ex Officio</i> , Voting Director)	
8	Director	Lori Cobos	The Public Counsel (Office of Public Utility Counsel) - Consumer Segment - Residential and Small Commercial (<i>Ex Officio</i> , Voting Director)	
10	Director	Nick Fehrenbach	Consumer Segment - Commercial	
9	Director	Sam Harper	Consumer Segment - Industrial	
11	Director	Clifton Kamei	Cooperative Segment	
12	Director	Kevin Gresham	Independent Generator Segment	
13	Director	Keith Emery	Independent Power Marketer Segment	
14	Director	Rick Bluntzer	Independent Retail Electric Provider (REP) Segment	
15	Director	Kenny Mercado	Investor-Owned Utility Segment	
16	Director	Carolyn Shellman	Municipal Segment	
17	Segment Alternate	Jennifer Richie	Consumer Segment - Commercial	
18	Segment Alternate	Glen Lyons	Consumer Segment - Industrial	
19	Segment Alternate	Mark Schwartz	Cooperative Segment	
20	Segment Alternate	Bill Beig	Independent Generator Segment	
21	Segment Alternate	Seth Cochran	Independent Power Marketer Segment	
23	Segment Alternate	Edward (Ned) Ross	Independent REP	
22	Segment Alternate	Mark Carpenter	Investor-Owned Utility Segment	
24	Segment Alternate	Jackie Sargent	Municipal Segment	

Note

Unaffiliated Directors are selected by the Nominating Committee of the Board, elected by the ERCOT Corporate Members and approved by the PUCT for a term of three years, subject to a term limit of two three-year renewals (for a maximum of nine years of service). For renewals, each Unaffiliated Director must be re-elected and re-approved for each subsequent three-year term. Market Segment Directors and Segment Alternates, as applicable, are elected by their respective Market Segments for a term of one year (that is, for service of January 1 through December 31 each year). The Bylaws do not prescribe any term limits, however, some Market Segments have their own internal guidelines for limits on terms of service. *Ex Officio* Directors serve by virtue of their office and maintain their positions on the Board so long as they continue to hold their respective positions outside of the Board.

Electric Reliability Council of Texas, Inc. (ERCOT)
Fiscal Year 2020-2021 Budget Request
Workpaper 2: Object of Expense Mapping - ABEST to ERCOT

Line	ABEST Object	ABEST Object Description	ERCOT Spend Category	ERCOT Account Summary
1	1001	Salaries & Wages	Payroll - Salaries & Wages	Salaries
2	1001	Salaries & Wages	Overtime Pay	Salaries
3	1001	Salaries & Wages	Vacation Liability	Salaries
4	75% to 1001 ⁽¹⁾ 25% to 1002 ⁽¹⁾	Salaries & Wages Other Personnel Costs	Contra Labor for Projects	Project Funded Labor
5	75% to 1001 ⁽¹⁾ 25% to 1002 ⁽¹⁾	Salaries & Wages Other Personnel Costs	Vacancy	Vacancy
6	1002	Other Personnel Costs	Bonus (Referral, Sign On)	Salaries
7	1002	Other Personnel Costs	Awards	Salaries
8	1002	Other Personnel Costs	Severance Pay	Salaries
9	1002	Other Personnel Costs	Health & Wellness Expense	Benefits & Taxes
10	1002	Other Personnel Costs	Health Insurance	Benefits & Taxes
11	1002	Other Personnel Costs	Dental Insurance	Benefits & Taxes
12	1002	Other Personnel Costs	Short-Term Disability	Benefits & Taxes
13	1002	Other Personnel Costs	Long-Term Care	Benefits & Taxes
14	1002	Other Personnel Costs	Life Premiums	Benefits & Taxes
15	1002	Other Personnel Costs	Health Savings Account - Employer Cost	Benefits & Taxes
16	1002	Other Personnel Costs	401K Match	Benefits & Taxes
17	1002	Other Personnel Costs	Roth IRA Match	Benefits & Taxes
18	1002	Other Personnel Costs	Pension Contributions	Benefits & Taxes
19	1002	Other Personnel Costs	Payroll Taxes - Social Security	Benefits & Taxes
20	1002	Other Personnel Costs	Payroll Taxes - Medicare	Benefits & Taxes
21	1002	Other Personnel Costs	Payroll Taxes - State Unemployment Insurance	Benefits & Taxes
22	1002	Other Personnel Costs	Payroll Taxes - Federal	Benefits & Taxes
23	1002	Other Personnel Costs	PBO Service Cost	Benefits & Taxes
24	1002	Other Personnel Costs	PBO Interest Cost	Benefits & Taxes
25	1002	Other Personnel Costs	Reward/Recognition-NonMonetary	Other Expenses

Note:

(1) The "Contra Labor for Projects" and "Vacancy" spend categories are credits which are allocated at 75% to the 1001-Salaries & Wages ABEST object and 25% to the 1002-Other Personnel Costs ABEST object.

Electric Reliability Council of Texas, Inc. (ERCOT)
Fiscal Year 2020-2021 Budget Request
Workpaper 2: Object of Expense Mapping - ABEST to ERCOT

ABEST				
Line	Object	ABEST Object Description	ERCOT Spend Category	ERCOT Account Summary
26	2001	Professional Fees & Services	Professional Services	Outside Services
27	2001	Professional Fees & Services	Professional Services - Training	Outside Services
28	2001	Professional Fees & Services	Immigration Services	Outside Services
29	2001	Professional Fees & Services	Consulting Services	Outside Services
30	2001	Professional Fees & Services	Contingent Labor	Outside Services
31	2001	Professional Fees & Services	Legal Services	Outside Services
32	2001	Professional Fees & Services	Board Retainer	Outside Services
33	2001	Professional Fees & Services	Board Non-Taxable Expenses	Outside Services
34	2001	Professional Fees & Services	Audit Services	Outside Services
35	2001	Professional Fees & Services	Professional Services - Research/Studies	Outside Services
36	2001	Professional Fees & Services	Security Services	Outside Services
37	2002	Fuels & Lubricants	Fuel Oil	Utility, Maintenance & Facility
38	2003	Consumable Supplies	Office Supplies	Materials, Supplies & Equipment
39	2003	Consumable Supplies	Janitorial Supplies	Materials, Supplies & Equipment
40	2003	Consumable Supplies	Uniform/Gear	Materials, Supplies & Equipment
41	2004	Utilities	Electricity	Utility, Maintenance & Facility
42	2004	Utilities	Water/Gas/Sewer/Trash	Utility, Maintenance & Facility
43	2004	Utilities	Telephone	Utility, Maintenance & Facility
44	2004	Utilities	Internet Service	Utility, Maintenance & Facility
45	2004	Utilities	Conferencing	Utility, Maintenance & Facility
46	2004	Utilities	Wide Area Network (WAN) Reimbursable Costs	Utility, Maintenance & Facility
47	2004	Utilities	Data Center Connectivity	Utility, Maintenance & Facility
48	2004	Utilities	Frame Relay	Utility, Maintenance & Facility
49	2004	Utilities	Network Telecom	Utility, Maintenance & Facility
50	2004	Utilities	Cellular Phone	Employee Expenses
51	2004	Utilities	Remote System Access	Employee Expenses
52	2004	Utilities	Wireless PC Card	Employee Expenses
53	2005	Travel	Mileage Reimbursement	Employee Expenses
54	2005	Travel	Business Meals	Employee Expenses
55	2005	Travel	Personal Meals	Employee Expenses
56	2005	Travel	Car Rental	Employee Expenses
57	2005	Travel	Airfare	Employee Expenses
58	2005	Travel	Lodging	Employee Expenses

Electric Reliability Council of Texas, Inc. (ERCOT)

Fiscal Year 2020-2021 Budget Request

Workpaper 2: Object of Expense Mapping - ABEST to ERCOT

ABEST				
Line	Object	ABEST Object Description	ERCOT Spend Category	ERCOT Account Summary
59	2005	Travel	Ground Transportation	Employee Expenses
60	2005	Travel	Gasoline	Employee Expenses
61	2005	Travel	Parking	Employee Expenses
62	2005	Travel	Other Employee Expense	Employee Expenses
63	2006	Rent - Building	Office Rent	Utility, Maintenance & Facility
64	2006	Rent - Building	Storage Rental	Utility, Maintenance & Facility
65	2006	Rent - Building	Leasehold	Utility, Maintenance & Facility
66	2007	Rent - Machine & Other	Equipment Rental	Materials, Supplies & Equipment
67	2007	Rent - Machine & Other	Miscellaneous Rental	Utility, Maintenance & Facility
68	2008	Debt Service	Debt Principal	Debt Service
69	2008	Debt Service	Fees & Interest Expense	Interest & Fees
70	2009	Other Operating Expenses	Bank Fees	Interest & Fees
71	2009	Other Operating Expenses	Relocation Benefit	Salaries
72	2009	Other Operating Expenses	Equipment Maintenance	Materials, Supplies & Equipment
73	2009	Other Operating Expenses	Vehicle Maintenance	Materials, Supplies & Equipment
74	2009	Other Operating Expenses	Equipment & Tools	Materials, Supplies & Equipment
75	2009	Other Operating Expenses	Furniture & Equipment	Materials, Supplies & Equipment
76	2009	Other Operating Expenses	Property Tax	Utility, Maintenance & Facility
77	2009	Other Operating Expenses	Building Maintenance	Utility, Maintenance & Facility
78	2009	Other Operating Expenses	Building Systems Maintenance	Utility, Maintenance & Facility
79	2009	Other Operating Expenses	Grounds Maintenance	Utility, Maintenance & Facility
80	2009	Other Operating Expenses	Custodial Service	Utility, Maintenance & Facility
81	2009	Other Operating Expenses	Miscellaneous Facility Services	Utility, Maintenance & Facility
82	2009	Other Operating Expenses	Insurance Premiums	Insurance
83	2009	Other Operating Expenses	Professional Dues	Employee Expenses
84	2009	Other Operating Expenses	Registration Fees	Employee Expenses
85	2009	Other Operating Expenses	College Education Reimbursement	Employee Expenses
86	2009	Other Operating Expenses	Company Dues	Other Expenses
87	2009	Other Operating Expenses	Publications	Other Expenses
88	2009	Other Operating Expenses	Subscriptions - Training	Other Expenses
89	2009	Other Operating Expenses	Subscriptions - Data Services	Other Expenses
90	2009	Other Operating Expenses	Corporate Events	Other Expenses
91	2009	Other Operating Expenses	Market Meetings	Other Expenses

Electric Reliability Council of Texas, Inc. (ERCOT)
Fiscal Year 2020-2021 Budget Request
Workpaper 2: Object of Expense Mapping - ABEST to ERCOT

ABEST				
Line	Object	ABEST Object Description	ERCOT Spend Category	ERCOT Account Summary
92	2009	Other Operating Expenses	Moving Expenses	Other Expenses
93	2009	Other Operating Expenses	Job Posting	Other Expenses
94	2009	Other Operating Expenses	Recruiting Expense	Other Expenses
95	2009	Other Operating Expenses	Employment Screening	Other Expenses
96	2009	Other Operating Expenses	Temp-to-Hire Fees	Other Expenses
97	2009	Other Operating Expenses	Postage & Shipping	Other Expenses
98	2009	Other Operating Expenses	Printing & Copying Services	Other Expenses
99	2009	Other Operating Expenses	Black Start Training	Other Expenses
100	2009	Other Operating Expenses	Operator Training Seminar	Other Expenses
101	2009	Other Operating Expenses	Legal Claims & Settlements	Other Expenses
102	2009	Other Operating Expenses	Media	Other Expenses
103	2009	Other Operating Expenses	Late Fee Payment	Other Expenses
104	2009	Other Operating Expenses	Write Off Adjustments	Other Expenses
105	2009	Other Operating Expenses	Discounts Taken	Other Expenses
106	2009	Other Operating Expenses	Miscellaneous Expense	Other Expenses
107	2010 ⁽²⁾	HW/SW Maintenance & Licenses	Information Technology Hardware	HW/SW License & Maintenance
108	2010 ⁽²⁾	HW/SW Maintenance & Licenses	Software License Perpetual	HW/SW License & Maintenance
109	2010 ⁽²⁾	HW/SW Maintenance & Licenses	Software License Renewable	HW/SW License & Maintenance
110	2010 ⁽²⁾	HW/SW Maintenance & Licenses	Software Maintenance	HW/SW License & Maintenance
111	2010 ⁽²⁾	HW/SW Maintenance & Licenses	Hardware Support & Maintenance	HW/SW License & Maintenance
112	2010 ⁽²⁾	HW/SW Maintenance & Licenses	Hardware Services	HW/SW License & Maintenance
113	2010 ⁽²⁾	HW/SW Maintenance & Licenses	Software Services	HW/SW License & Maintenance
114	2010 ⁽²⁾	HW/SW Maintenance & Licenses	Software as a Service (SAAS)	HW/SW License & Maintenance
115	2011 ⁽²⁾	Reliability Organization Assessment	ERO Assessment	Other Expenses
116	5000	Capital Expenditures	Capital Expenditures	Capital Expenditures
117	5000	Capital Expenditures	Minor Capital Expenditures	Minor Capital
118	5000	Capital Expenditures	Common Infrastructure Expenditures	Common Infrastructure

Note:

(2) These expenses do not clearly correlate to ABEST objects; therefore, ERCOT has assigned pseudo ABEST object numbers in the allocation model to assist with reporting of the expenses.

Attachment E

ERCOT 2019–2023 Strategic Plan

Strategic Plan

2019-2023

A message from the CEO

One of the most important things an organization can work on is its strategy. Developing strategy requires an enterprise to look beyond its current operations and consider developments that may alter what it takes to successfully operate in the future. Strategy looks for threats and opportunities and formulates ways to meet them successfully.

ERCOT develops our strategy by looking ahead in five-year increments. There is no magic in this particular time period, but a five-year period does require us to think far enough into the future to consider potential technological, economic and policy changes. Some changes beyond the horizon may soon shape ERCOT's ability to deliver its mission of serving the public by ensuring a reliable grid, efficient electricity markets, open access and retail choice. Planning ahead in this way is essential to ERCOT leading with independent insight amidst the many changes impacting electricity markets and technology.

As our 2019-2023 Strategic Plan highlights, ERCOT is prepared to maintain excellent operations and to improve and modernize our business processes as necessary to meet emerging challenges. The plan sets a course for building on the success of the ERCOT system and for providing employees with the tools they need to achieve strategic objectives in every part of the ERCOT enterprise.

This plan was developed by numerous ERCOT stakeholders: the ERCOT Board of Directors, representatives of our Market Segments, ERCOT executive management and a Strategic Planning Team comprised of ERCOT employees.

ERCOT employees provided feedback and helped identify key issues facing the company's future. I appreciate the efforts of all those who participated, in particular our Enterprise Risk Management & Strategic Analysis team, who provided leadership throughout the process.

The main point of defining strategy is to direct action that will move the strategy forward. With a well-considered strategy in place for 2019-2023, ERCOT's job moving forward is to establish strategic priorities, align our efforts to those priorities and execute successfully to deliver on our critical public service mission.



Sincerely,

A handwritten signature in black ink, appearing to read "Bill Magness". The signature is fluid and cursive, with a prominent "B" and "M".

Bill Magness
President and CEO

About ERCOT

Founded in 1970, the Electric Reliability Council of Texas (ERCOT) is an independent, not-for-profit organization responsible for overseeing the reliable and safe transmission of electricity over the power grid serving most of Texas.

As the Independent System Operator (ISO) since 1996, ERCOT has been the broker between competitive wholesale power buyers and sellers. In 1999, the Texas Legislature restructured the Texas electric market by unbundling the investor-owned utilities and creating retail customer choice in those areas. ERCOT was assigned four primary responsibilities:

- System reliability – planning and operations
- Wholesale market settlement for electricity production and delivery
- Retail registration process for customer choice
- Open access to transmission

ERCOT provided the platform upon which Texas' electric utility industry made the transition to retail competition on January 1, 2002. Today, ERCOT manages the flow of electric power to more than 25 million Texas customers – representing about 90 percent of the state's electric load. As the ISO for the region, ERCOT schedules power on an electric grid that connects more than 46,500 miles of transmission lines and 600+ generation units. It also performs financial settlement for the competitive wholesale bulk-power market and administers retail switching for 7 million premises in competitive choice areas.

ERCOT is a membership-based 501(c)(4) nonprofit corporation, governed by a 16-member Board of Directors and subject to oversight by the Public Utility Commission of Texas (PUC) and the Texas Legislature. Its members include consumers, cooperatives, generators, power marketers, retail electric providers, investor-owned electric utilities, transmission and distribution providers and municipally-owned electric utilities.

How ERCOT is funded

The PUC has authorized ERCOT to charge the ERCOT System Administration Fee to fund its budget. ERCOT converts the fee into a charge to each Qualified Scheduling Entity using the formula set forth in the ERCOT Protocols, which is based on actual volume consumption of electricity. ERCOT submits a biennial budget to its Board, and ultimately, the PUC for final approval. The 2018-2019 budget maintained the System Administration Fee at 55.5 cents per MWh (no increase from the 2016-2017 budget). ERCOT anticipates maintaining a flat System Administration Fee through 2024, and as a result, management and staff remain dedicated to seeking opportunities to improve operational efficiency, as well as continue cost-management initiatives that have enabled the ISO to postpone or minimize fee increases in spite of additional costs associated with the increasingly complex electric market.



ERCOT executives established direction

Vision: Lead with independent insight on the future of electricity reliability, markets and technology in Texas in order to facilitate grid and market change for the benefit of all stakeholders.

Mission: We serve the public by ensuring a reliable grid, efficient electricity markets, open access and retail choice.

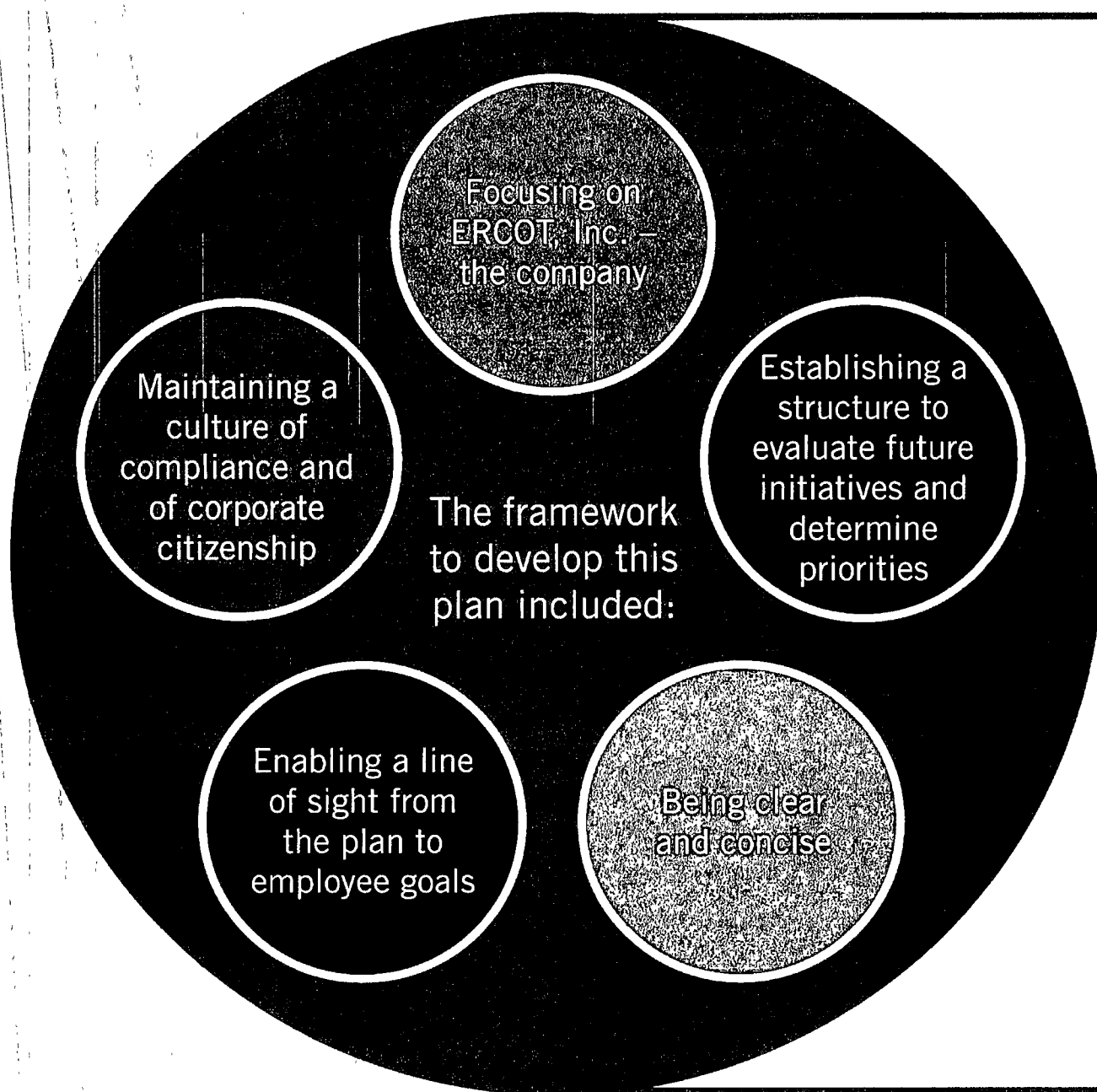
Key areas of focus:

- People
- Grid
- Technology
- Market

Preparing the Strategic Plan

ERCOT leadership is focused on continuing to develop an organization (people and systems) that can quickly adapt to provide value to those we serve.

ERCOT utilized a traditional strategic planning process involving its Board, stakeholders and employees.



Defining the strategy

ERCOT began developing its 2019-2023 Strategic Plan in early 2018. Executive leadership identified a Strategic Planning Team comprised of eight individuals representing various areas of the organization. This group was charged with leading the effort to define opportunities and challenges facing ERCOT, and to draft a strategic plan document for 2019-2023.

The planning team and executives engaged in training to establish a common language and approach for the process. Twenty working sessions were held to identify drivers and refine the most critical aspects used to shape ERCOT's strategies.

Staff was encouraged to provide feedback through the Strategic Planning Team, the CEO Focus Group and a strategic planning survey.

The ERCOT Board of Directors and stakeholders provided feedback through Board meetings and Market Segment review sessions.

The process was facilitated internally by ERCOT's Enterprise Risk Management and Strategic Analysis team.

ERCOT will continually review its strategy to quickly adapt to the rapidly changing environment in which it operates.

Mission
and
Objectives

Environmental
Scanning

Strategy
Formulation

Strategy
Implementation

Evaluation
and Control

Key drivers that shape ERCOT's strategies

Grid modernization and complexity

The grid is changing dramatically and quickly, and becoming ever more complex. Grid modernization and the smart grid will play key roles in ERCOT's strategies to operate reliably. As grid technology changes, there is a greater need for improved modeling, monitoring and analytical tools.

Changing resource mix

ERCOT's resource mix continues to change as new technologies emerge. The economies of various technologies change relative to one another. Policies tailored to specific resource types are continually introduced or rolled off. These challenges require the ISO to proactively model these changes and anticipate reliability issues and market design implications associated with the changing resource mix.

Decreasing visibility and control

The integration of new resource technologies, distributed energy resources and other small energy resources complicate ERCOT's ability to have visibility into and control of the electric system. Although individually each is a small impact, the increasing lack of visibility on the aggregate creates a transmission-level reliability concern.

Collaborative interaction

The current technological methods of sharing information are not optimal in the long run. There is a need for effective and open collaboration and straightforward information exchange with Market Participants, regulators, industry, researchers and peers, in order to share expertise, expand learning opportunities and proactively plan for change.

Increasing number of electricity consumers and changing usage patterns

The population growth rate in Texas, coupled with increased consumer use of smart home technology and the electrification of the transportation sector are changing power usage patterns. With the emergence of new resource technologies, an understanding of how these trends will impact the transmission system and to what degree integration with the grid and wholesale markets is appropriate will prove essential.

Providing high-value services

ERCOT is tasked to responsibly use funds to provide high-value services and maintain reliability while rising to the challenges of an increasingly complex and changing industry. It is imperative to take a proactive, strategic approach to this to work. As the industry and workforce changes, ERCOT must identify the skill sets needed and implement efforts to attract and retain the right workforce to fulfill ERCOT's mission.

Cyber security and physical security vulnerabilities

The industry continues to see an increase in the sophistication and volume of cyber attacks. There is a constant need to protect physical and cyber assets. Increased vulnerabilities require ERCOT to continuously evaluate what additional steps are needed.

Balancing advanced technology and reliability

Improvements in technology, increasing amounts of data and quicker response times provide opportunities for improved analytical capabilities that are required to manage the grid reliably.

Minimizing reputational risk

ERCOT has the unique responsibility to manage the flow of electric power to Texas consumers, perform financial settlement for the competitive wholesale bulk-power market and administer the retail registration process in competitive choice areas. Since even minimal errors or issues outside of ERCOT's control can negatively impact external parties' impressions of the organization, ERCOT must continually nurture relationships while enforcing an internal culture of compliance, security and reliability.

Strategic Plan objectives

Enhance operating capabilities

to maintain reliability
of an increasingly
complex system

To reliably operate the increasingly complex electric grid and markets, ERCOT must enhance its analytical capabilities and the resilience of its critical infrastructure and systems.

These enhancements will include:

1. Advancement of ERCOT's modeling, monitoring and analytical tools
2. Assimilation of evolving technologies into these tools and processes
3. Performance of more rigorous forward analyses and scrutiny of system events

Improve information exchange

to facilitate
collaborative
interaction

To improve information exchange, ERCOT will modernize business operations and data integration with stakeholders by enhancing the provision of data and reports and facilitating a more streamlined process for data submission to ERCOT, while maintaining security and confidentiality.

ERCOT will collaborate with Market Participants, regulators, industry, researchers and our peers to share expertise, expand learning opportunities and proactively plan for change.

Strategic Plan objectives

Advance competitive solutions

for a changing
industry

To support efficient electric markets, open access and retail choice, ERCOT will use its expertise to provide fact-based, objective analysis to policy and decision-makers to advance competitive solutions for an evolving industry.

ERCOT will partner with stakeholders and industry experts to:

1. Facilitate entry and participation in markets by new and existing resource types
2. Continue to evolve the necessary Ancillary Services
3. Improve the reliable and efficient management of regional transmission constraints
4. Pursue opportunities to enhance the flexibility of ERCOT's systems to more readily accommodate such changes

Optimize use of ERCOT, Inc.'s resources

to continuously
provide high-value
services

To ensure the responsible use of the funds it is entrusted with while rising to the challenges of an increasingly complex and changing industry,

ERCOT will proactively drive strategic requirements to:

1. Optimize allocation of resources to strategic priorities
2. Leverage innovative and efficient solutions
3. Promote enterprise-wide thinking
4. Ensure staff has the knowledge, skills and abilities to match the evolving state of technology and the industry
5. Foster employee engagement and accountability

Attachment F

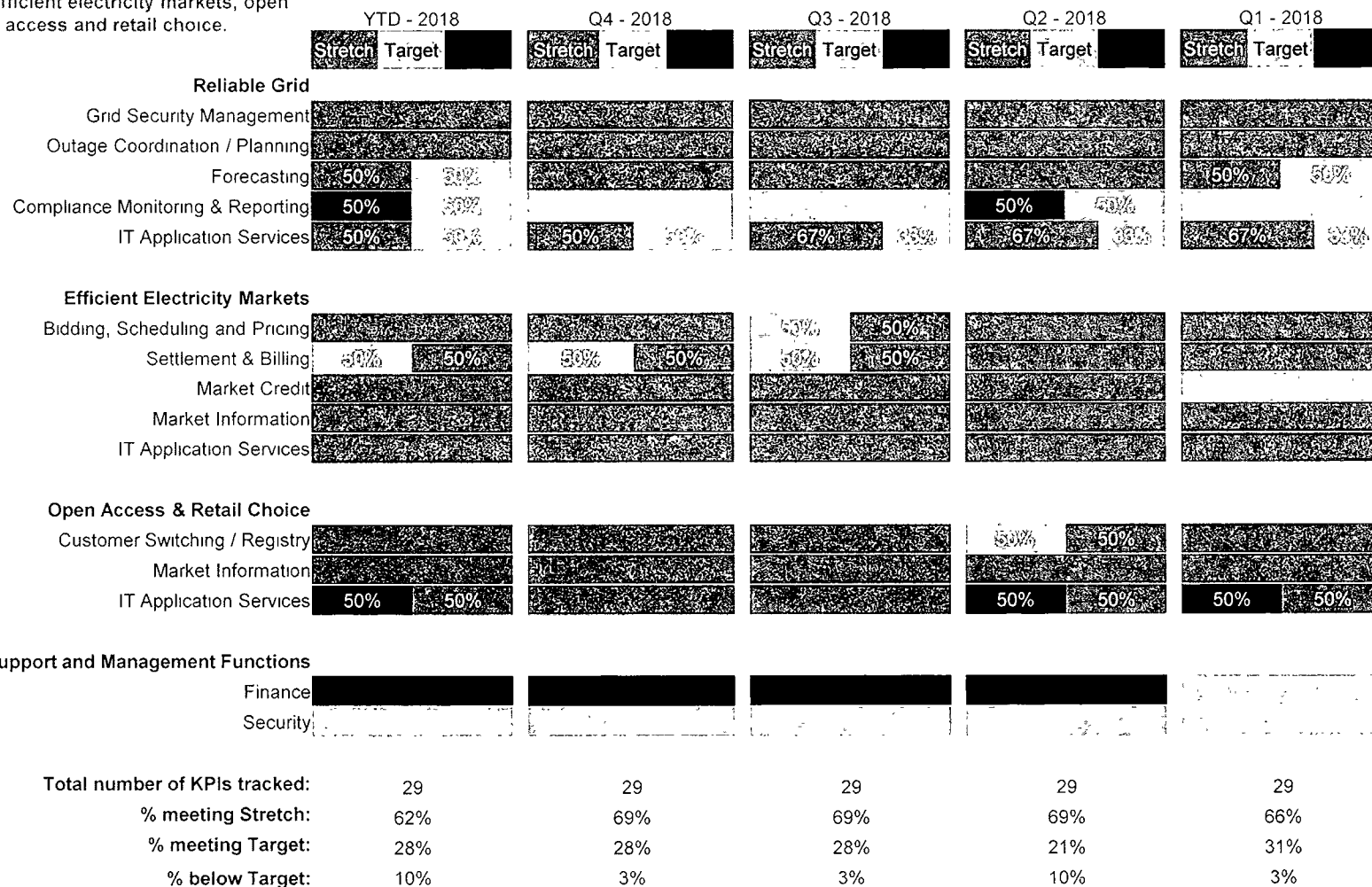
ERCOT Report on Performance Measures for 2018



ERCOT Report on Performance Measures for 2018

2018 Key Performance Indicator (KPI) Summary

We serve the public by ensuring a reliable grid, efficient electricity markets, open access and retail choice.



2018 KPI Detail – Reliable Grid

KPI ID	KPI Description	2018 Target Performance	2018 Stretch Performance	2018 YTD	Q4	Q3	Q2	Q1
Grid Security Management								
RG 1	Control Performance Standard 1 (CPS1) frequency control performance (rolling 12 month CPS1 score)	> 140	> 150	All scores greater than 150	Oct: 176.03% Nov: 173.73% Dec: 175.64% 12 Months rolling CPS1 average of 175.67% at the end of Dec 2018	Jul: 176.4% Aug: 174.8% Sep: 174.4% 12 Months rolling CPS1 average of 176.0% at the end of September 2018	Apr: 175.9% May: 174.1% Jun: 173.7% 12 Months rolling CPS1 average of 176.7% at the end of June 2018	Jan: 178.78% Feb: 176.49% March: 177.93% 12 Months rolling CPS1 average of 176.59% at the end of March 2018
RG 2	Interconnection Reliability Operating Limit (IROL) exceedance limitations	None longer than 20 minutes	None longer than 10 minutes	No IROL exceedances	No IROL exceedances	No IROL exceedances	No IROL exceedances	No IROL exceedances
Outage Coordination / Planning								
RG 3	Outage Coordination performance: requests approved or denied within timeline and with mitigation plans developed if required	97%	99%	99.78%	99.59%	99.78%	99.93%	99.81%
Forecasting								
RG 4	Operations Load Forecast performance - Mean Average Percent Error (MAPE) monthly average day ahead load forecasts used for DRUC MAPE	All less than 4.0%	All less than 3.5%	3.81%	2.91%	2.41%	2.14%	3.81%
RG 5	Wind forecast performance - MAPE based on installed wind capacity monthly average day ahead wind forecasts used for DRUC MAPE	All less than 10%	All less than 8%	All less than 8%	Oct: 3.60% Nov: 4.55% and Dec: 4.95%	Jul: 4.5% Aug: 5.4% and Sep: 3.8%	Apr: 5.1% May: 4.9% and Jun: 5.8%	Jan: 5.50% Feb: 7.60% and March: 5.40%
Compliance Monitoring & Reporting								
RG 6	Achieve compliance with NERC/FERC Standards	No significant violations found in a NERC Compliance Engagement	N/A	No exceptions found in an SOC audit	No significant violations found in a NERC Compliance Engagement No exceptions found in an SOC audit	No significant violations found in a NERC Compliance Engagement No exceptions found in an SOC audit	No significant violations found in a NERC Compliance Engagement No exceptions found in an SOC audit	No significant violations found in a NERC Compliance Engagement No exceptions found in an SOC audit
RG 8	Achieve compliance with SOC controls	No exceptions found in an SOC audit	N/A	No exceptions found in an SOC audit	No exceptions found in an SOC audit	No exceptions found in an SOC audit	No exceptions found in an SOC audit	No exceptions found in an SOC audit

RG7 is intentionally left blank.



2018 KPI Detail – Reliable Grid Continued

KPI ID	KPI Description	2018 Target Performance	2018 Stretch Performance	2018 YTD	Q4	Q3	Q2	Q1
IT Application Services								
RG 9	Energy Management System Tier 1 Aggregate Availability	All Tier 1 systems meet or exceed defined SLAs (99.90%)	N/A	100%	100%	100%	100%	100%
RG 10	Energy Management System Tier 2 Aggregate Availability	Achieve 99.9% availability for 10 of 11 Tier 2 systems	Achieve 99.9% availability for all Tier 2 systems	99.99%	100%	100%	99.99%	100%
RG 11	Security Constrained Economic Dispatch (SCED) Availability	99.95%	100%	99.99%	99.99%	100%	100%	100%
140 RG 12	Number of unplanned SCED outages greater than 30 consecutive minutes (per quarter)	Zero	N/A	Zero	Zero	Zero	Zero	Zero
RG 13	Outage Scheduler Availability	99%	99.5%	100%	100%	100%	100%	100%
RG 14	Network Model Management System (NMMS) Availability	99%	99.5%	100%	100%	100%	100%	100%

2018 KPI Detail – Efficient Electricity Markets

KPI ID	KPI Description	2018 Target Performance	2018 Stretch Performance	2018 YTD	Q4	Q3	Q2	Q1
Bidding, Scheduling and Pricing								
EM 1	DAM quality of solution as measured with price corrections. percent of hourly prices requiring DAM price correction	1-3 % of time	< 1 % of time	0.16%	0.38%	0.27%	0%	0%
EM 2	SCED solution is solved and posted percent of 15-minute Settlement Interval prices where price corrections are performed	0.5% - 1%	< 0.5%	0.03%	0%	0.10%	0%	0%
Settlement & Billing								
EM 3	Achieve timely settlements per Protocol defined timelines	99%	100%	100%	100%	100%	100%	100%
EM 4	Perform accurate settlements as measured by the percent of Operating Day and operating month settlement that does not require a correction as a result of an error in the settlement and billing systems or processes	98%	99.9%	99.72%	99.78%	99.11%	100%	100%
Market Credit								
EM 5	Credit reports are correct and posted in a timely manner	98%	100%	100%	100%	100%	100%	99.89%
Market Information								
EM 6	Wholesale extracts available per Protocol timelines	98%	99%	99.93%	99.98%	99.97%	99.94%	99.81%
IT Application Services								
EM 7	Congestion Revenue Rights (CRR) Availability	99%	99.5%	100%	100%	100%	100%	100%
EM 8	Market Management System Aggregate Availability	99%	99.5%	100%	100%	100%	100%	100%



2018 KPI Detail – Open Access & Retail Choice

KPI ID	KPI Description	2018 Target Performance	2018 Stretch Performance	2018 YTD	Q4	Q3	Q2	Q1
Customer Switching / Registry								
OARC 1	Conduct retail transaction processing per Protocol timelines	98%	99%	99.40%	99.98%	99.92%	98.37%	99.31%
OARC 2	End use customer switch notifications processed per PUCT rules	99%	100%	100%	100%	100%	100%	100%
Market Information								
OARC 3	Retail extracts available per Protocol timelines	98%	99%	100%	100%	100%	100%	100%
IT Application Services								
OARC 4	Retail Processing Availability - Business Hours	99.90%	99.95%		100%	100%		
OARC 5	Market Information System (MIS) Availability	99%	99.5%	99.92%	99.79%	99.90%	99.94%	99.99%

2018 KPI Detail – Other Support & Management Functions

KPI ID	KPI Description	2018 Target Performance	2018 Stretch Performance	2018 YTD	Q4	Q3	Q2	Q1
Finance								
OSM 1	Manage spending to be equal to or less than the board-approved expenditure budget	Between 0 - 5% favorable variance	N/A					1.8%
Security								
OSM 2	Maintain ERCOT ISO's security posture against cyber security threats as defined in the Security Incident Response Plan	Zero externally reportable cyber security incidents	N/A	Zero externally reportable cyber security incidents	Zero externally reportable cyber security incidents	Zero externally reportable cyber security incidents	Zero externally reportable cyber security incidents	Zero externally reportable cyber security incidents
OSM 3	Maintain ERCOT ISO's security posture against physical security threats as defined in the Security Incident Response Plan	Zero externally reportable physical security incidents	N/A	Zero externally reportable physical security incidents	Zero externally reportable physical security incidents	Zero externally reportable physical security incidents	Zero externally reportable physical security incidents	Zero externally reportable physical security incidents